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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KNABLE, GEOFFREY L

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 07/31/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,330

Applicant(s)

CARETTA ET AL.

Examiner

Geoffrey L. Knable

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-57 and 67-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 46 is/are allowed.
- 6) ☒ Claim(s) 39-45, 47-57 and 67-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. Per applicant's request with the 10-26-01 preliminary amendment, the examiner agrees that the same restriction requirement as made in the parent application would have been made in this application and thus acknowledges the election of the claims directed to what was "group I", the remaining now cancelled claims being directed to non-elected inventions.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 39-45, 47-57 and 74-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frazier (US 3,356,553) taken in view of Dickinson (US 1,420,611) and Rowley (US 990,392).

Frazier teaches making a tire including making a carcass structure (10), applying a belt (31), tread (32) and sidewalls (35) followed by vulcanization. Further, the carcass is formed from continuous reinforced strip material (14) applied in alternate sections to form a u-shaped conformation including two side portions and a crown portion (e.g. note fig. 1). Further, the reference indicates that the successive sections are overlapped in the side portions and may be abutted or side by side in the crown region (e.g. note esp. col. 6, lines 28-33). This thus teaches a process that meets all of the claim 39 requirements except that the reference does not describe upon what the carcass is formed and thus a toroidal support is not explicitly described.

Frazier does however clearly teach that the carcass is formed as a "generally torus shaped body approximating its form in a completed tire" (col. 2, lines 52-54). Building in toroidal form approximating its form in the final tire is additionally said to be

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important to avoid movement of the cords in completing the tire - note col. 3, lines 41-47.

It is therefore clearly critical in the Frazier reference that the carcass be built in *toroidal form*. As would be readily apparent to the ordinary artisan, to build a carcass in toroidal form will of necessity require more support than simply supporting two bead rings. In other words, one having ordinary skill in this art would have certainly realized that to achieve a toroidal carcass, the bead rings alone could not have possibly provided the necessary support. Therefore, it is submitted that the ordinary artisan would have certainly understood that *to build a carcass in toroidal shape will require a toroidal support*, not simply two supported bead rings. The references to Dickinson (note esp. "10" in figs. 2 and 6) and Rowley are cited as additional evidence in this art that somewhat similar toroidal carcass constructions (i.e. those built from a continuous strip) are conventionally and typically built on a toroidal support in order to achieve a toroidal shape. To use a toroidal support to build the desired toroidal configuration of Frazier would thus have been obvious to the ordinary artisan in this art.

As to claims 40 and 41, the overlapping portions in Frazier clearly converge toward the axis and have decreasing overlap towards the crown (e.g. note fig. 2). As to claim 42, because of the raw nature of the rubber forming the strips, the strips would be expected to be jointed wherever they overlap, particularly at the bending regions where the overlap is the greatest. Note also page 3, lines 9+ of Rowley. As to claims 43 and 45, side by side strips at the crown as taught by Frazier would of necessity require a pitch corresponding to the strip width and a submultiple of the circumference at the crown. As to claim 44, Frazier clearly contemplates correlating the pitch to the strip width

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- selection of a desired or required pitch therefore would be within the skill of the artisan and only lead to the expected results. As to claim 45 and 47, it is taken as extremely well known and conventional in the tire building art to press or "stitch" applied layers together and to the building support, this serving to better adhere layers as well as avoid air pockets. Such pressing would be expected to slightly widen the pressed materials - these claims require no more than this. As to claim 48, Rowley suggests that the strip initial end adheres to the support but does not suggest suction to aid this. It however is well known in this art to utilize suction to maintain desired positioning of tire building materials relative to a support surface - to utilize suction in this role to help assure that the strip end is held would therefore not have been unobvious. As to claim 49, the distributor element taught by Rowley translates both radially and axially while the toroidal support rotates. As to claims 50-52, note retention means 59 of Rowley. As to claims 53 and 54, as noted above, stitching in tire building is well known and obvious to ensure that the materials bond without air pockets. As to claim 55, note beads 17 in Frazier. As to claim 56, the strips of Frazier are turned back and forth around the beads at its ends - it would not seem at present that this claim requires anything more than this. As to claim 57, Frazier suggests that additional layers may be provided (col. 7, lines 9-11). As to claim 74, although detail of the vulcanization is not given, it is extremely well known and common in this art to first disengage the green tire from its building form and place within it an air tube in the curing press - following such conventional procedures would therefore have been obvious. As to claim 75, it would seem that Frazier contemplates an expansion within the claimed range - note col. 6, lines 65-70.

As to new claim 76, the references are applied substantially as they were to claim 39. Additionally to build a carcass from continuous strip but where the beads are applied after the carcass ply is built would have been obvious in light of Rowley – note esp. page 3, lines 76+. As to new claim 77, it would seem to have been necessary and obvious that the materials will or should certainly be laid on the exterior of the support (as opposed to e.g. the interior). As to new claim 78, insofar as Frazier indicates that the sections may be abutted at the crown, and since the strips are apparently of constant width, any place they are abutted, they would expected to also be “parallel” as claimed. As to new claim 79, as already noted, Frazier contemplates abutting adjacent edges in the crown – in such case a single layer would be present (note also col. 2, line 55). As to new claim 80, although the Frazier reference suggests that the layers “A” are laid followed by “B”, it is considered that even following this laying technique, the requirement of claim 80 is met. In particular, if one starts at the outside of one bead (call it “layer A”) and then progresses to the other bead followed by a return to the first bead (to form “layer B”), the layer “B” back at the first bead is now the first deposited section relative to the *subsequent laying* of the next layer “A”, this next layer A being then the second deposited section and being further from the equatorial plane as claimed.

4. Claims 67-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frazier (US 3,356,553) taken in view of Dickinson (US 1,420,611) and Rowley (US 990,392) as applied above, and further in view of Hollis et al. (US 3,580,781).

Neither Frazier nor Rowley provide details of the tread application, it being assumed that application of a single strip is contemplated. Hollis et al. is directed to

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applying the tread of a new tire and teaches building up the tread in a plurality of radially superposed coils of calendered material, the coils having progressively reduced width (e.g. note fig. 8). This is said to avoid problems caused by the presence of a joint when wrapping the conventional tread slab (note col. 2). It would have been obvious to build the tread of the primary reference from plural radial coils of reduced width in light of this teaching.

5. Claims 70 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frazier (US 3,356,553) taken in view of Dickinson (US 1,420,611) and Rowley (US 990,392) as applied above, and further in view of Holroyd et al. (US 4,743,322) and Holroyd et al. (US 4,983,239).

Holroyd et al. '322 teaches injection molding of sidewalls to improve the appearance of the final tire - e.g. note col. 2, lines 4-5 and fig. 4. Plural mold filling steps are also contemplated (col. 2, lines 18+). To injection mold the sidewall of the primary reference would have been obvious in light of this teaching, improved appearance being the expected result. Holroyd et al. '239 has been cited to further show preforming sidewall with two parts, in this case with radially inner and outer portions (13 and 14 in fig. 4).

6. Claims 72 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frazier (US 3,356,553) taken in view of Dickinson (US 1,420,611) and Rowley (US 990,392) as applied above, and further in view of Laurent (US 4,963,207).

Neither Frazier nor Rowley indicate whether an airproof innerliner is present. Typical tire constructions however include an airproof innerliner to reduce the

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permeability of the tire and to thus include such as the initial layer would have been obvious to the ordinary artisan. Note for example Laurent which is also directed to forming tires on a toroidal support and includes a liner layer as the inner layer, this further being formed by winding a ribbon of the liner material (e.g. note col. 6, lines 20-21).


7. Claim 46 is allowed.

Although it is known to form strips for application as a carcass to be wider in the central regions corresponding to the crown (e.g. Price (US 1,193,715) is just one example), the closest prior art does not teach or render obvious a method as claimed that further includes exerting a pressing action on continuous strip elements during the deposition step but before deposition to define regions of greater width close to the inner circumferential edges of the carcass structure as claimed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey L. Knable whose telephone number is 703-308-2062. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W. Ball can be reached on 703-308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.


Geoffrey L. Knable
Primary Examiner
Art Unit 1733

G. Knable
July 27, 2002